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PARALLAX NOTES

Parallaxes of Three Planetary Nebulae.

Since the publication of the third series of parallaxes determined with the 60-inch reflector (*Mt. Wilson Contr.*, No. 158), three more parallaxes of planetary nebulae have been finished. They are:

N. G. C.	$\Pi_{rel.}$	P. E.
6804	+0″.020	±0″.003
6905	+0 .013	±0 .002
7008	+0 .014	±0 .004

This brings up to six the total number of planetaries for which parallaxes have been determined here. A detailed discussion of this material will shortly appear in the *Proceedings of the National Academy of Sciences.*

Parallax of W. B. 4^h 1189

From 20 exposures taken with the 60-inch reflector, a relative parallax of +0″.107 ±0″.006 was derived for this star. The first determination by Flint gave +0″.290 ±0″.042; the star was therefore one of the ten nearest for which parallaxes were given in the *Publications of the Astronomical Laboratory at Gröningen, No. 24.* Later determinations, however, show that probably the star is much farther away than was first supposed. Yale gives +0″.104 ±0″.015, and Miller +0″.111 ±0″.019, while Adams' spectroscopically determined parallax is +0″.095.

Comparison Star of Large Proper Motion.

In measuring the parallax of Boss 1182 one of the comparison stars was found to show a considerable proper motion; it was accordingly dropped for comparison purposes, but its proper motion and parallax were determined.

From two pairs of plates with a four-years' interval I find the proper motion to be:

$$\mu = 0''.377 \text{ in p. } 114^\circ.6$$

The parallax derived from 18 exposures is:

$$\Pi_{rel.} = -\ 0''.010\ \pm 0''.006$$

This small value is improbable and may be due to the very asymmetrical situation with respect to the eight comparison stars, which were the same as for Boss 1182. The star is now placed on the regular parallax program. It is 2′.9 west and 1′.8 south of Boss 1182; the position for 1900 is, therefore:

$$\alpha = 4^h\ 53^m\ 11^s$$
$$\delta = +39^\circ\ 13'$$

The photographic magnitude, derived from counts of stars of equal and brighter magnitude, is 13.2.

This star is the second of the 697 comparison stars, thus far used in the Mount Wilson parallax work, that had to be rejected for comparison purposes on account of large proper motion, the other being the companion of 55 *Cancri*.

A. VAN MAANEN.

THE LIGHT CURVE AND ORBITAL ELEMENTS OF THE ECLIPSING BINARY Y LEONIS

In a recent issue of the *Bulletin Astronomique*[1] Luizet has published results from 498 visual observations of the faint eclipsing binary Y *Leonis*. The estimates of magnitude are carefully made and are well distributed thruout the whole interval of light variation, and when the measures are adjusted to a standard magnitude scale the series of observations affords material for a light curve of more than ordinary completeness and accuracy.

A series of photographic and photovisual observations of the eight comparison stars used by Luizet has been made with the 60-inch reflector. The measurement and reduction of the photographs yields a curve for the transformation of his estimates into photovisual magnitudes, referred to the scale of the Mount Wilson Polar Standards. The range of variation, according to the revised data, is nearly a magnitude greater than that obtained by Luizet from his provisional system of magnitudes.

The adjusted values of Luizet's normal points are plotted for the principal minimum in Figure 1. Each group contains five observations. The theoretical light curve, based on the elements given below, appears in the figure, with open circles representing the computed points. As is frequently the case when the eclipse is deep and total, the orbit and theoretical light curve are very definitely determined. The primary eclipse is almost centrally total; the computed constant phase at minimum is 23 minutes in

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[1] Vol. 34, page 169, 1917.